

***Artists Using Science and Technology***

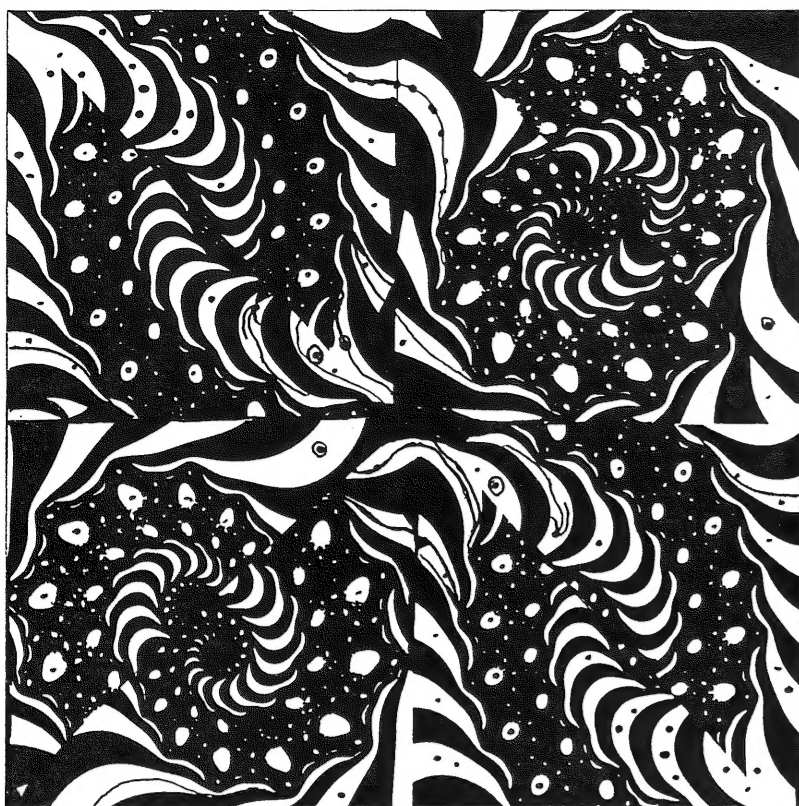
Ylem (Eye-lum): The exploding mass out of which the universe emerged in the Big Bang

**Ylem Newsletter**  
**Vol.12, No.8 August 1992**



*Friendly Fractal*, computer art by Peter King

# The Mathematical Aquarium: The Rehumanization Of Cybernetic Imagery



Homage to Mandelbrot (left), and Fractal Metamorphosis II (below), computer-initiated design in drawing and collage, by Paul Hartal

by Paul Hartal

Information-preserving transformations such as fractals play an important role in computer-aided graphics and design. Fractals, introduced by Benoit Mandelbrot in the 1970s, represent a new type of geometry which is non-Euclidean in character. Traditional Euclidean geometry has reduced irregular chaotic patterns to ordered shapes and forms: circles, triangles, and squares. However as Mandelbrot points out "Clouds are not spheres, mountains are not cones, coastlines are not circles, and bark is not smooth nor does lightning travel in a straight line." The enormous significance of fractals lies in their capability to describe the irregularities of the natural world. The new science of chaos is related to fractals because the latter represents a revolutionary idiom to analyze and delineate irregular phenomena. Billowing clouds, rugged coastlines, craggy mountains and fractured rocks can be portrayed and simulated as mathematical models based on fractals. Microscopic phenomena and anatomical details of veins or capillaries

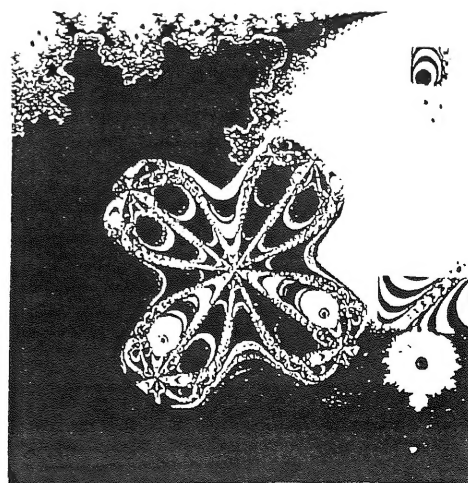
in the human body can be represented in a similar manner.

In effect, fractals are self-similar entities that through interactions build a hierarchical universe in which the parts resemble the whole. The process of self-replication yields a cluster of worlds within a world. A scaling fractal is endowed with the striking property that its fractional dimension is greater than its topological dimension. Thus, a meandering one-dimensional line may eventually fill up a two-dimensional surface. Consequently, when the line fills up less than the whole two-dimensional area of a surface, its convoluting snowflake curve might assume the fractal dimension of 1.26. On the other hand if you crumple a paper into a ball, the resulting rough surface will have a fractal dimension ranging between 2 and 3. A randomly pock-marked golf ball has a fractal dimension of 2.3.

In addition to the non-Euclidean geometries of Bolyai Lobachevsky and Rieman, Mandelbrot has expanded the edifice of mathematicians beyond the

scope and range of intuition and tradition. In the world that lies beyond our immediate sense perceptions, the length of the coastlines of a country is not identical to what we measure on site or on the map. On a microscopic scale, due to its twists around grains of sand, its length is infinite.

For the art world the significance of fractals is far-reaching. The sharp differentiation between geometrical abstraction and amorphous form cannot be maintained any longer. Nor can the distinction between the biotic and the mineral. Picasso and other Cubists inherited from Cézanne the idea that the painter ought to search for the sphere, the cone and the cylinder as the underpinning elements of nature. This still may be a cogent theory as an individual aesthetic strategy. However, this is not what nature imposes on the artist. In my own work I consider the need for humanization of the technological environment as an inexorable task for the artist. This also applies for computers. A case in point is computer-generated design. In the *Fractal Series*, I have transformed machine-initiated pictures into a new logical framework of visual existence. The metamorphosis involves cognitive recycling. The image results from a palindromic interaction on the creative process of the mind-machine-mind triad. The program input produced by a human mind and the cybernetic output have been tessellated, altered and redesigned by another human mind.



## Ylem Forum: Interactive art

**Wednesday, September 2, 7:30 pm**

McBean Theater, The Exploratorium,

3601 Lyon Street, San Francisco

Info: Nancy Frank 415-626-5742

### Program

**Kenneth Rinaldo and Mark Grossman** will exhibit the first interactive tail from their *Flock Series*. The work will be a series of computer-controlled robotic tails which hang upside down from the ceiling and respond to different sounds and voices by moving toward or away from the viewer. They will be able to sense his or her position with infrared eyes to make decisions, while passing messages amongst each other with telephone tones. Rinaldo and Grossman hope that when the series is complete that the *Flock* will exhibit a form of machine/human consciousness in which the participant and machine will dynamically sense and adapt to each other.

**Dan Mapes of the Digital Media Cyberlabs** will bring a small team to share some electronic art generated in real time. It will be projected onto large video screens, a real-time blend of computer graphics and music.

**Coactive Aesthetics founders David Gaw and Ed Koch** will show a video tape of their interactive art *The Fence*, an environment which interacts and acts to viewers and their surroundings.

### Ylem Membership Meeting

**September 2, 7 pm**

A brief meeting before the Forum for the election of new board members. The Board of Directors has forwarded the following nominations: Larry Shaw, Lucia Grossberger, Ken Rinaldo and Steve Wilson.

*Nancy Frank, organizer of this Forum, is a San Francisco-based promoter who specializes in video and conceptual art. Her clients include Bill Graham Presents, ArtCom, San Francisco Mart, Institute of Living Arts and Contemporary Arts Press.*

**Mike Mosher** will present his HyperCard-driven art/music/vocal work, *Christopher Cumulonimbus*, performed by Mike and Chrysanthe Mosher and special guests. The imagery of 500 years of American history are explored in 500 seconds of slide images, accompanied by rock 'n roll improvisations.

**Sylvia Pengilly**, professor of music at Loyola University in New Orleans, will demonstrate the interactive software, *Mandala*, with a different twist: the image of the performer allows moving graphics in the background to show through, creating a moving silhouette. Audience members will be invited to experience this "environment," after which an abbreviated version of *Solitaire*, a work in progress, will be presented.

### Art in The Lobby

**Tim Treen:** Interactive video including *Photo Opportunity*, a concise comment on modern warfare.

**Lucia Grossberger:** A demonstration of *SpaceLace*, a computer-generated kaleidoscope developed with Bob Bishop that forms dazzling patterns throughout the viewer's field of vision.

**Eleanor Kent:** Knitted Fractals. By using fractals for designs in knitting, Kent makes high-level mathematics accessible to the rest of us.

**Donald Simpson:** Simpson does sculpture in several media, especially plastics, as well as technical models and computer graphics.



*Photo Opportunity, video installation by Tim Treen*



## Events

August 5, 7:30 pm

### Artist Talk: Introduction to Dance of the Honeybees

An exploration of San Francisco's Mission District by tracking the flight paths of bees. Artist/beekeeper Mark Thompson looks at past explorations and introduces his work with honeybees, currently on exhibit. **McBean Theatre, The Exploratorium, 3601 Lyon St., San Francisco; 415-563-7337**

August 6-8

### Cyberspace in Music Therapy (Immaculata, PA)

A conference within a larger conference at the Institute for Music and Healing. Organized by Rebecca Mecuri. It will treat the artificial intelligence and virtual reality technology being developed at NASA, which is potentially applicable to music therapy. Hardware and software available from NASA at minimal cost for these applications will be enumerated. **Institute for Music and Healing, Immaculata College, PO Box 697, Immaculata, PA 19345; 215-647-4400 ext. 419**

August 7 - September 5, 8 pm

### Metamorphosis

Remember Kafka's surreal short story? It has been adapted for stage by Steven Berkoff. On Aug. 14-15, Aug. 21-22, Aug. 28-29 at 10:30 pm there will also be a late-night show featuring five short plays by local playwrights. Produced by San Francisco Theatre Project. **Climate Theatre, 252 9th St., San Francisco, CA 94103; Box Office, 415-626-9196**

August 11-13

### Image World Los Angeles Desktop Photography

Free Exhibits. Seminar, Friday Aug. 14, \$175, covers: benefits and pitfalls of digital photography; how to configure desktop photography computer systems; how to choose between Photo CD, digital cameras, or scanning; ethics issues involving truth in photography, image copyright, and electronic publishing. To be held at Long Beach Convention Center. **Knowledge Industry Publications, Inc. 701 Westchester Avenue, White Plains, NY 10604. Or call 800-800-5474, or 914-328-9157; Fax 914-328-9093.**

August 17-21

### Desire, Power, Technology: The Technologized Body Conference

Instructors: Sharon Grace, Steve Beck, Alison Kennedy, Arthur and Marilouise Kroker, Jaron

Lanier, Ron Reisman and Avital Ronell. Links artists and writers with theorists, engineers and computer scientists. Hands-on demos of virtual reality and multi-media systems, field trips to corporate and government labs. Fee: \$700, non-credit, \$1400, 3 units credit. **San Francisco Art Institute, 800 Chestnut, San Francisco, CA 94133; 415-749-4554**

August 21, 7:30 pm

### Desire, Power, Technology: The Technologized Body Symposium

When our sensory awareness is clogged with signals that are technologically mediated, what part of us remains uniquely human? Same cast of characters as the conference listed above. Note: A series of interactive events will precede and follow this program. Info on these, **415-749-4545 after July 15.** Admission: \$5. **San Francisco Art Institute, 800 Chestnut, San Francisco, CA 94133; 415-749-4588**

September 2, 7:30 pm

### Ylem Forum: Interactive Art

Details on page three.

September 2, 7 pm

### Ylem Membership Meeting

A short meeting before the Forum. Details on page three.

September 5-7

### Burning Man at Black Rock (Black Rock Desert, NV)

Accompany the Burning Man into the vast Black Rock Desert of Nevada for an event-filled weekend. In the middle of this barren flat, people will create a temporary community around a 4-story tall wooden man, sheathed in neon. On the evening of Sept. 6, the man will expire in flames. Fee: \$25. **575 Pierce St. #102, San Francisco, CA 94117; 415-621-3675**

All events and exhibits are in the San Francisco Bay Area except where noted. Is your event or exhibit listed here? Send to Ylem Editor, 967 Moreno, Palo Alto, CA 94303.

Some calendar items reprinted from Art Calendar (the monthly marketing and career management journal for artists, PO Box 1040, Great Falls, VA 22066, Subscr. \$32/yr.), Video Networks (from Bay Area Video Coalition), Small Computer in the Arts Newsletter (SCAN), 5132 Hazel Ave., Phila., PA 19143 and FineArts Forum e-mail.

## Exhibits

August 1 - January 3, 1993

### Finding your way: Artists' Perspectives

Celebrates the amazing human ability to get from here to there—without getting lost along the way—from the perspective of artists. Art Installations: *Dance of the Honeybees* by Mark Thompson, artist/beekeeper. Thompson explores a neighborhood in San Francisco solely by the foraging movements of honeybees. *Portraits for the Twenty-First Century* by Morgan O'Hara offers visitors two ways to make their own self portraits. The first is a drawing table with a map of the world on which one can trace individual travels by hand. The second is



computer software which takes visitors through the process of self-portraiture by tracing lifetime travels into a printed image. *Tactile Maps: Orientation sculpture for the blind* by Will Nettleship. These maps guide visitors by shape and by surrounding floor textures, sensed with canes. Although commissioned as an artwork, the maps actually serve as functional tools that allow the visually impaired to navigate the museum. *VBK—A moviemap of Karlsruhe* by Michael Naimark Surrogate travel program through Karlsruhe, Germany using an interactive video that allows you to control the path and speed of the train. Michael Naimark filmed the entire tramway system in both directions from a tramcar. **Exploratorium, 3601 Lyon St. S.F. CA 94123; 415-561-00307**

August 6-31

### The Animated Soul: Gateway to Your Ka

Ylem member Sonya Rapoport is known for her innovative computer-based interactive installations. The exhibit is based on the Egyptian *Book of the Dead*. The participant becomes involved in an engaging personal search using ancient ritual and beliefs transformed by the artist into the technological language of today. **Reception: August 6, 5:30-7:30 pm. Takada Fine Arts, 251 Post St., San Francisco, CA 94108; 415-956-5288**

August 6 - September 27

### The Search for Self

Exhibit includes Ylem member Ruth Asawa. **Center for Visual Arts, 1300 Broadway #100, Oakland, CA 94612; 510-451-6300**

Computer drawings on these pages by Barbara Nessim

Through September 20

### Images du Futur (Montréal, Canada)

The beautiful, all-summer high-tech show that was reviewed in the July Newsletter. Includes Ylem artists Alexander, Georges Dyens, Marjorie Franklin, Nancy Gorglione, Milton Komisar, Beverly and Hans Reiser, Ken Rinaldo, Bruce Tobin, Austine Wood-Comarow and Ellen Sandor. **La Cité des Arts et des Nouvelles Technologies de Montréal, 15, rue de la Commune ouest, #101, Montréal, QB, Canada H2Y 2C6; 514-849-1612**

Through September 27

### Computer art by Roberta Kirk Portland, OR)

Black and white and hand-colored laser prints; also, color photographs. **Powell's Technical Bookstore, 33 NW Park Ave., Portland, OR 97209; info: Daria, 503-640-0525**

Through November 9

### La Revue Virtuelle (Paris)

Devoted to the study and the representation of news technologies in the arts. Available later: video disk by same name. **Centre Georges Pompidou, Place Beaubourg, Paris; Contact: Jean-Pierre Biron, Dir. de la Communication, fax: 33 (1) 42 77 40 03.**

## Opportunities

Deadline July 31

### Film Arts Festival: A Celebration of Bay Area Independent Film and Video

Film Arts Festival celebrates the talent and diversity of Bay Area film and videomakers with a non-competitive presentation of works from the past three decades. **Film Arts Festival, 346 Ninth St., 2nd floor, San Francisco, CA 94103; 415-552-0602**

Deadline August

### Independent Feature Film Market

A leading international showcase for new U.S. independent features and short films that are seeking distribution.

**Independent Feature Film Market, 132 W. 21st St., 6th floor, New York, NY 10011; 212-243-7777**

Deadline August 1

### Cinequest

Oct. 8-11. Camera Cinema Complex. NTSC-VHS preview tape; 16mm or 35mm for festival. \$20. Open to independent filmmakers. Features

and shorts. **Cinequest, P.O. Box 720040, San Jose, CA 95172-0040; 408-739-6238; Fax 408-720-8724**

Deadline August 1

### National Juried Exhibition.

\$1,000 cash awards (plus a solo show in 1993). Open to U.S. artists (no students). Paintings and sculpture, max. 5' and 100 lbs. \$20 for up to 3 slides. Juror: Penn Stallard, Assoc. Dir., Advanced Imaging, Center for Robotics in CA. **Surya Gallery, 227 N. 9th St., Lincoln, NE 68510; 402-474-2559.**

Deadline August 1

### Cine

Cine selects films and videos for entry in international film festivals. Non-feature films, documentaries and shorts. Winning a Golden or Cine Eagle may also qualify a producer to enter the Academy Awards. Formats: 3/4", 1/2" and 16mm. Fees: \$75-\$125. **Cine, 1001 Connecticut Ave. N.W. #1016, Washington, DC 20036; 202-785-1136**

Deadline August 1

### Artist Equipment Access Awards

For non-commercial programs, especially ones in association with community groups, being made by members of Bay Area Video Coalition (BAVC). Equipment time valued at up to \$10,000 offered, but no other types of expenses. Projects to be completed by Dec. 31st. Send resumé, one-page description of project, budget, VHS sample tape (10 min. max.), and membership fee (if necessary). **Artist Equipment Access Awards, BAVC, 1111 17th St., San Francisco, CA, 94107; 415-861-3282**

Deadline August 3

### The New York Festival

International Competition for Television Programs.

Categories: 1. Non-broadcast home video productions, multi-image, audio-visual, created since 8/1/91 (except home videos produced since 8/1/90). Formats: 3/4" U-Matic, 1/2" VHS 16mm, 35mm. Entry fees start at \$110. 2. Television programs, all categories. Entry fees start at \$100. 3/4" U-Matic, made after 8/1/91.

**The New York Festivals, 655 Ave. of the Americas, 2nd floor, New York, NY 10010; 914-238-4481.**

Deadline August 8

### First Annual Worldwide Audiovisual Art Exhibition

Awards. Open to all. All media, "no limitations." New exhibit concept, vast audiences available to accepted works. **School of Bayonne, 53 Lispenard St., New York, NY 10013; 212-473-2423**

Deadline August 10

### SCAN '92—Emerging Connectivity

Conference November 6-8 at the Franklin Institute Science Museum. Conference themes: Connecting technology and creativity; using the computer as a medium in which two or

more artists can collaborate; developing new tools and new media for artists. Proposals sought in following categories: papers for publication; 45-minute presentations, panels; performances; corporate presentations; and vendor booths. Prospectus: **Small Computers in the Arts Network, 5132 Hazel Avenue, Philadelphia, PA 19143; info: Misako Scott, 215-472-2392; Fax 215-568-8017**

Deadline August 31

### American Video Conference Awards

Categories include: Fine Arts (painting, film, sculpture, photography, museum guides). Format: 1/2". Fee: \$80. **American Film Institute, 2021 North Western Ave., Los Angeles, CA 90027; 213-856-7787**

Deadline August 31

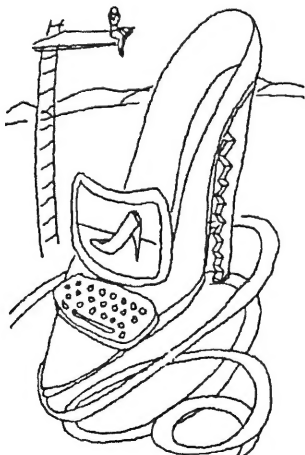
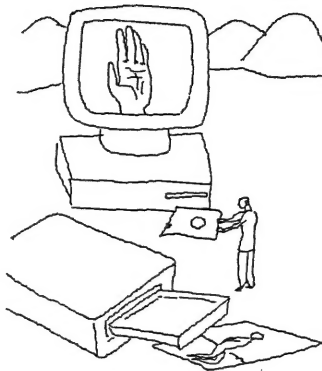
### Joey Awards

Sponsored by the San Jose Convention and Visitors Bureau in association with the San Jose Film and Video Commission. Critiques will be given to each entrant. **San Jose Film and Video Commission, 333 W. San Carlos #1000, San Jose, CA 95110; 408-295-9600**

Deadline September 1

### Poster Session Entries, TISEA

Poster session materials due for the Third International Symposium on Electronic Art (TISEA) to be held in Australia Nov. 9-13. Proposals must be RECEIVED by due date, and hard copy is preferred. **TISEA, PO Box A307, Sydney South, NSW, 2000, Australia; tel. 61-2-360-5807; Fax 61-2-360-2943; anat@peg.pegasus**



Deadline September 1

### Center Quarterly, "How We See: Photography Now."

International juried project. Open to photography and computer imaging. Those accepted are published in Center Quarterly and first prize winner will get a solo show at the center's Kodak Gallery. **Kathleen Kenyon, Center for Photography, 59 Tinker St., Woodstock, NY 12498; 914-679-9957**

Deadline September 9

### NEA Design Arts Program

Project Grants for Individuals, Individual Grants for Design, Innovation, U.S.A. Fellowships, International Exchange Fellowships. **National Endowment for the Arts, Nancy Hanks Center, Design Arts Program, 1100 Pennsylvania Ave., N.W., Washington, D.C. 20506; 202-682-5437.**

Deadline September 15

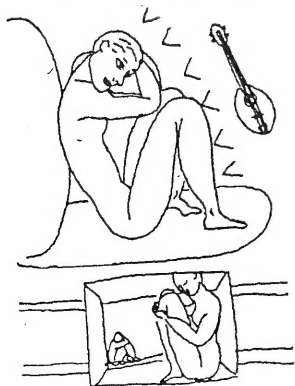
### Call for Papers

Symposium on Arts and Technology, March 4-6, 1993, seeks papers on all aspects of art and technology, but is particularly focused on interactivity, virtual reality, cognition and the arts, film and video, experimental theatre, the compositional process and the speculative use of technology in education. Submit two-page abstracts including audio-visual requirements. **Dr. Noel Zahler, Center for Arts and Technology, Box 5632, Connecticut College, 270 Mohegan Ave., Now London, CT 06320; nbzah@conncoll**

### Drawing Studios and Gallery

This gallery is part of a complex of 30 artists' studios three blocks from the Electronic Cafe. In it is the "International Slide Gallery" on a large light table. Wanted: slides of computer art. Send 12 slides, which will be rotated in the exhibit over a six-month period. Fee: \$50. Prospectus, send SASE to: **Aida Cynthia de Santis, The Drawing Room, 1907 Olympic Blvd., Santa Monica, CA 90404; 310-315-1088**

Computer drawings on these pages by Barbara Nessim



### PBS "Artist at Work" Series

Open to artists working in painting, sculpture, and original print media. \$20 entry fee. (We believe this must be for broadcast on public television). **Artists At Work, P.O. Box 3432, Annapolis, MD 21403**

### Languages of Design

A new journal by Ray Lauzanna and Denise Penrose seeks submissions on the subject of productive systems, ie. systems that make things. "Formal theoretical foundations are of particular interest." It seeks papers that bridge the gap between the arts and sciences. Send for "Instructions to Authors." **Languages of Design, attn. Lauzanna, 8697 Bronson Dr., Roseville, CA 95661; 916-791-1973; Fax 415-896-1512**

### Pseudo-Miro Drawings

Ylem member Clifford Pickover will publish the five best B/W drawings he receives that resemble the abstract, primitive lithographs of surrealist Joan Miro. Ones with astronomical, mathematical or creature elements are especially requested. Full credit given to the artist. [Ed. note: Miro's work bears strong resemblance to Spanish paleolithic cave drawings]. **Dr. Clifford Pickover, IBM Thomas J. Watson Research Center, Yorktown Heights, NY 10598; 914-945-3630; Fax 914-945-3630; cliff@watson.ibm.com**

### Needs and Offerings

#### 3-D TV at Home

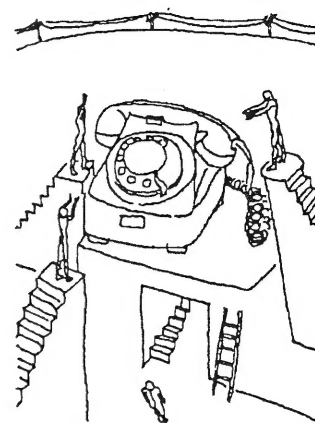
Michael Starkes, who spoke at the last Ylem Forum, has a company that offers 3-D videotapes (60 titles, \$50 each), Home 3-D Theatre (driver, visor, and a tape of your choice, \$190), and Toshiba 3-D camcorder (price reduced to \$2700). **3D TV Corp., PO Box Q, San Rafael, CA 94913; 415-479-3516; Fax 415-479-3316**

#### Hardware and Software for Distributed Control Devices

Coactive Aesthetics, an Ylem affiliate, offers a low-cost "turn-key" device designed for interactive artists working with distributed embedded systems. GCB11 Networked MC68HC11 Microcontroller, \$179. Quantity discounts. 30-day free inspection. **Coactive Aesthetics, PO Box 425967, San Francisco, CA 94142; 415-626-5152; Fax 415-626-6320; coactive@coactive.com**

#### Intertek

Cyberpunk consciousness. Articles on Brenda Laurel, Bruce Sterling. Subscriptions are \$8.00 per year for 3 issues. **Mr. Steven Steinberg,**



**Editor, 325 Ellwood Beach #3, Goleta, CA 93117; 805-685-6557; steve@cs.ucsb.edu.**

### Introduction to Video as an Art Form

Workshop August 1 & 8, 10 am-2 pm. Explore the potential for personal expression in video. Everyone will have a chance to operate cameras and contribute to the completion of a group project. Instructor: **Danny Ray Leopard. Fee: \$60. EBA School of Art, 689 Bryant, San Francisco, CA 94107; 415-777-1474**

### NEA, PBS Under Attack

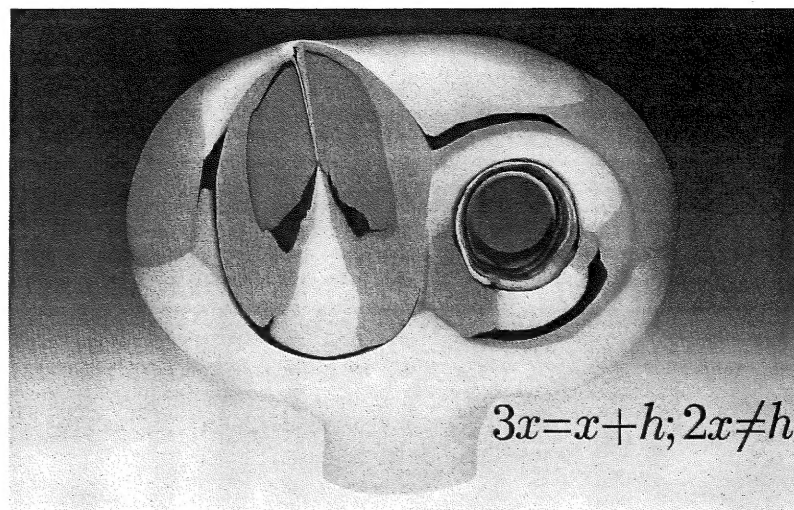
Continual pressure from the right wing has caused grave changes at the National Endowment for the Arts (NEA), and next on the hit list is public broadcasting. Upon being appointed acting head of the NEA, Anne-Imelda Radice vetoed two grants already approved by the peer review system because she disapproved of the content of the art. The artists and curators, charged with picking projects based on artistic merit alone, were outraged. Two peer review panels resigned. Radice relented, but ugly divisions remain. Artists Equity has set up a toll-free number where you can order four letters (to your two senators, your representative, and Anne-Imelda Radice) to be sent in your name for only \$6.95. Ylem member Ruth Asawa also recommends you write local school boards and city councils in support of NEA projects. **1-800-892-2121**

### The National Endowment for the Arts Video

A 10-minute video "The Arts in America" is available to arts organizations free of charge on a loan basis. It explores the arts events and experiences made possible by NEA grants to communities and schools. Arts agencies and organizations may copy the video and show or distribute it in their areas, and are invited to use the tape as a prototype for their own local showcase videos. **Public Information Office, National Endowment for the Arts, 1100 Pennsylvania Ave., N.W., Washington, DC 20506; 202-682-5400.**



A specialized telescope designed by Ylem member **Roger Malina** and his associate, Stuart Boyer, was launched into space in June 4th aboard a Delta rocket. It will record stellar sources emitting wavelengths in the extreme ultraviolet range... **Richard Clar** presented a paper at the First European Space Art Symposium at Montreux, Switzerland, on *Space Flight Dolphin*, a sculpture/satellite which will be deployed by a NASA space shuttle in low earth orbit. It will transmit dolphin "voices" which can be downlinked at museums around the world... **Sonya Rapoport's** piece, *The Animated Soul: Gateway to Your Ka*, is being shown at the Kuopio Museum in Finland all summer. This is a copy of her exhibit based on the Egyptian *Book of the Dead* showing concurrently in San Francisco (see *Exhibits*). For instance, she is substituting 8-foot prints of mummies for real coffins... **Barbara Nessim** has been named Chair of the Illustration Department at Parsons School of Design. Her interactive book project is being featured at SIGGRAPH '92. The computer randomly selects from her many metaphorical drawings a unique printout which you can assemble into a miniature book... The tiny 6-point types used in phone books will soon be available for the Macintosh from Adobe Systems. "Can you imagine my making 6-point bitmaps?" writes typographer **Bob Ishi**... A special forum on computers and sculpture was held at International Sculpture '92 in June. **Bruce Beasley** co-chaired it. Other participating members were **Kenneth Snelson**, **Stuart Dickson** and **Helaman Ferguson**... A composition by **Todd Winkler** was performed at a computer music festival sponsored by Center for Computer Research in Music and Acoustics at Stanford in July... **Louis M. Brill**, producer of Ylem's Virtual Reality fundraiser in June, has also been writing about VR in *Computer Graphics World*, *Funworld*, *SIGGRAPH Show Daily*... **Sylvia Pengilly** won first prize at the Amiga Expo in February for her fractal video, *Elemental Chaos*... *Add Noise*, a San Francisco computer art exhibit co-curated by **Diane Fenster** included work of **Erol Otis**, **Helen Golden**, **Barbara**



Mathematically-based metal sculpture by Helaman Ferguson

About 150 mathematicians, artists, and hybrids thereof showed up in June for the Art and Mathematics '92 Conference (AM92) and made this one of the most exciting gatherings that I've ever attended. This was the first art and mathematics conference to be held at the State University of New York, Albany campus. I counted 11 Ylem members, of whom 5 were invited speakers.

Judging from the listings of events in the Ylem Newsletter, I surmise that most of you who live in the Bay Area get to interact fairly often. In my corner of the world I don't know anyone besides myself doing math-related art. At AM92 I found myself suddenly meeting more such people than I generally do in a year, and every one of them was unusually interesting. I was by no means the only one who felt this way. The consensus was that AM92 was special. We knew that the world outside was still falling apart as usual, but at AM92 a benign spirit seemed to reign. We found ourselves surrounded by beautiful math-inspired culture and polyhedron models, popping our eyeballs on stunning slides and videos, and

**Nessim** and **Kit Pravda**... The Computers for Artists Conference was held in New York City in June by **Ken Roberts'** company, New Futures World Marketing.

conversing excitedly about quasi-crystals and higher dimensional spaces. There was a noticeable downplay of the usual academic ego-tripping and competition, for attendees were there as much to listen and to learn as to give and share. For four exhilarating and exhausting days I felt like I was flying through hyperbolic space and I still haven't really come down.

The tone was set by mathematician and sculptor, Nat Friedman, an Ylem member who single-handedly organized the conference. First of all, he had the contacts to bring an extremely diverse group of speakers to the podium. And then his relaxed style and flexibility with the scheduling, not to mention his jitterbug dancing, made us all feel mellow. Thank you, Nat, for being the loosest mathematician on the planet, and for having the energy and the insight to make it all happen!

A full report on the conference would fill a whole year's worth of Ylem newsletters. What I hope is that some Balzac or Tolstoy was in attendance and will write a novel that will say it all. If you're interested in the interaction of art, math, and fun, be at AM93.

[Editor's note: *Turning the Sphere Inside Out*, seen at two Ylem Forums in the early eighties during its early stages of development, still lives. A beautiful new version of it was shown at the conference and mentioned shortly thereafter by Ivors Petersen in his *Science News* review of the conference].

Please send a  
**membership  
application** and  
sample newsletter to  
(me) (my friends) at:

NAME \_\_\_\_\_

ADDRESS \_\_\_\_\_

**Yearly membership rates:**

U.S. Individual **\$30**

U.S. Institution **\$45**

U.S. Student or Senior **\$20**

Canada/Mexico add **5 US\$** to U.S. rates; all  
other countries add **15 US\$** to U.S. rates.

Membership includes 12 issues of the *Ylem  
Newsletter* & listing in the *Artists Using  
Science and Technology Directory* which  
you will receive in the Autumn.

**MAILING LABELS  
OF YLEM MEMBERS**

(about 250 artists &  
art enthusiasts) are  
available to Ylem  
members for \$20.

Info: Bev Reiser  
510-482-2483  
or send \$20 with  
your request to  
address below.

☐ Sample issue &  
application only (free) ☐ I enclose \$\_\_\_\_\_ for membership (see above)

**Ylem** is a non-profit, networking organization.

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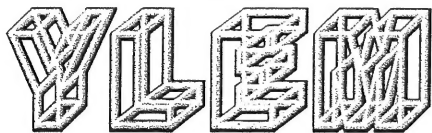
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Larry Shaw

Nancy Frank



From *Christopher Cumulomimbus*, a performance work by Mike Mosher



**Artists Using Science and Technology**

Return address (memberships/subscriptions, sample Newsletters):

**PO Box 749, Orinda, CA 94563**

For submissions to this publication or regarding its content, please see below.

**Contributions are most welcome**

The Ylem Newsletter needs Ylem members' art and  
articles, notices of events, exhibitions, etc. Art  
submitted must reproduce well with b&w copy  
machine. If you have done art on a Macintosh, you  
may send us a disk. Please include title, date  
created, medium and phone number. Articles should  
be 400-800 words long, preferably on a Mac disk.  
Send to **Ylem Editor** (see below).

**Ylem's Two Addresses:**

Submissions and notices for  
Newsletter, write:

**Ylem Editor**  
**967 Moreno Ave.**  
**Palo Alto, CA 94303;**  
**Trudy, (415) 856-9593**

Sample Newsletters, membership  
info., any other Ylem business, write:

**Ylem (main office)**  
**PO Box 749**  
**Orinda, CA 94563**

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**August 1992  
Newsletter**

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# *The Fifth Annual Directory of Artists Using Science and Technology*

**Deadline:  
September 1st, 1992**



*"Mirage," computer painting by Tarey Dunn*



*"Synergy," performance work by Robert J. Martin*

Abundantly illustrated and updated annually, the *Directory* lists about 250 artists, scientists, art visionaries and enthusiasts, all members of Ylem: Artists Using Science and Technology. Over its eleven-year lifespan Ylem has attracted a variety of well known figures in the arts and sciences. The artesian pressure of their talent opens up opportunities to exhibit and perform in an otherwise skeptical gallery milieu. Containing contact information along with descriptions of each member's work, the *Directory* links artists, collectors, galleries, and educators by phone and electronic mail. One year membership in Ylem includes a copy of the edition of the *Directory* in which you are listed.

## *To be listed in the Directory:*

If you are not already a member of Ylem or your Ylem Newsletter mail label says "Last Issue: 8/92" or sooner you must join or renew by **September 1st** to be in the *Directory*. Please see reverse.

## *To submit a photo of your work or an ad:*

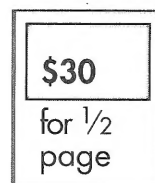
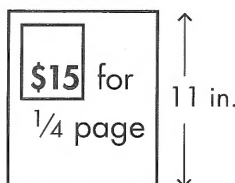
**Please include the following  
information on the back of  
your original:**

No Post-Its, please; use  
label with secure adhesive.

- ① Your name**
- ② Caption for picture (title,  
medium, date, etc.)**
- ③ An arrow indicating which is the  
top of the image**

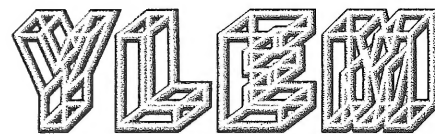
### **④ Fee category:**

← 8½ in. →



- ⑤ If you want your original returned, please  
indicate and enclose a self-addressed stamped  
envelope.**
- ⑥ Photo fees above are *in addition to membership  
dues*. More details on reverse.**

# The Directory of Artists Using Science and Technology



**PO Box 749  
Orinda, CA 94563**

**As well as being listed in the *Directory*, your membership in Ylem includes:**

- ✱ **A copy of the *Directory* in which you are listed** along with about 250 other artists and enthusiasts of new art forms. Please see reverse about how members may have their art published in the *Directory*. (If you join after the deadline, you will be listed in and receive the following year's *Directory*.)
- ✱ **The monthly *Ylem Newsletter*** containing articles on numerous topics along with news of members and a calendar of events and art opportunities.

Ylem also presents bi-monthly **Forums** and sponsors social activities and field trips in the San Francisco Bay Area.

## Yearly membership rates:

US Individual	<b>\$30</b>	Canada/Mexico add <b>5 US\$</b> to US rates; all other countries add <b>15 US\$</b> to US rates.
US Institution	<b>\$45</b>	
US Student or Senior	<b>\$20</b>	

Membership includes the next edition of the *Directory*. **The current *Directory* is also available at extra charge:**

With membership in Ylem: **\$6**  
(+ \$3 if outside USA)  
Not joining Ylem: **\$15** (+ \$3 if outside USA)

**Please fill in only if you are joining for the first time or if information needs to be updated:**

☐ Please don't include my name when the Ylem mailing list is sold to other members for mailings.

NAME \_\_\_\_\_ PHONE (home) \_\_\_\_\_  
BUSINESS NAME (optional) \_\_\_\_\_ PHONE (business) \_\_\_\_\_  
ADDRESS \_\_\_\_\_ FAX \_\_\_\_\_

\_\_\_\_\_ E-MAIL \_\_\_\_\_

PLEASE DESCRIBE YOUR WORK/INTERESTS \_\_\_\_\_ Please write TITLE & DESCRIPTION OF  
(Art media; art-, science- or technology-related PHOTO SUBMITTED on  
interests, activities, services) in 30 words or less. \_\_\_\_\_ the back of your original  
to avoid confusion.

**Send along with your picture and fees to the address above by September 1st, 1992.**

## About photo submissions (continued from other side)

- If you have had your picture in the *Directory* before, a new picture is preferable.
- As the *Directory* is a black-and-white publication, images with good contrast and sharp focus are recommended. Please don't send color pictures with dot patterns or halftones (continuous-tone color OK).
- **Photos with grey tones:** We will make 100 line/inch halftone photostats. If your image has special reproduction requirements, please explain on the back of your original.
- **Macintosh graphics files:** Send your Mac disk if the art will print well on a LaserWriter.
- We will do our best to scale pictures to the area purchased (see reverse), but due to the dimensions of the pages it may have to be scaled smaller if the picture is too narrow, vertically or horizontally.
- If the art does not fill the picture area, we reserve the right to crop it.
- For more information call Trudy Myrrh Reagan: (415) 856-9593.